PROGRAM facts

U.S. DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY

Strategic Center for Natural Gas

03/2004

LIQUEFIED NATURAL GAS (LNG)

Natural Gas demand is expected to increase 30% in the next decades with an increase from 22 Tcf to 31 Tcf from 2002 to 2025[1]. With the outlook for production from the U.S. lower-48 and non-Arctic Canada flat to declining, new sources of supply will be required to meet the projected growth in natural gas demand. LNG imports will have to make up 14-17% of the natural gas supply by 2025, with an increase of 0.7 Bcfd to 12.5 Bcfd, in order to meet the projected natural gas demand[2]. LNG is available and could meet 20-25% of demand by 2025, but is higher-cost and faces major barriers to development[2]. Achieving and retaining the ability to import increasing volumes of LNG is important to create a sustained natural gas supply/demand balance.

The goal of the Liquefied Natural Gas Program is to maintain and enhance the transportation, storage, and safety of the nation's liquefied natural gas system in order to meet the growing demand for natural gas. Based on a collaborative approach to identify priorities and opportunities for research and development (R&D) funding, projects supported by DOE are developing technologies to ensure the availability of clean, affordable, energy for our homes, businesses, and industries.

The Liquefied Natural Gas Program supports the development and deployment of a steady stream of products and technologies that will progressively expand the nation's liquefied natural gas system. Program areas include transportation technologies, storage technologies, safety technologies, and educational programs.

The approach of the program is to work with industry, academia, non-profit trade organizations, other government agencies, and national labs to: 1) identify and characterize unrealized LNG resources and storage technologies; 2) define the barriers currently blocking LNG distribution to market; 3) develop and test the most promising new approaches to overcoming these barriers; 4) conduct demonstrations to support the commercialization of the most successful technologies and products; and 5) provide detailed analysis of LNG technologies and sites to assess safety.

CONTACT POINTS

Rodney Anderson
Technology Manager
LNG/Delivery Reliability/ Storage
304-285-4709
rodney.anderson@netl.doe.gov

Daniel Driscoll
Project Manager
LNG/Delivery Reliability/ Storage
304-285-4717
daniel.driscoll@netl.doe.gov

CUSTOMER SERVICE

1-800-553-7681

WEBSITE

www.netl.doe.gov

STRATEGIC CENTER FOR NATURAL GAS WEBSITE

www.netl.doe.gov/scng

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1 EIA, 2004. Annual Energy Outlook: 2004.

2 National Petroleum Council. 2003. Balancing Natural Gas Policy – Fueling Demands of a Growing Economy. Volume I.

Why Do We Need Liquefied Natural Gas Research?

The North American resource base has met the natural gas demands of Canada, Mexico, and the United States to date. However, this is not expected to continue and increased imports of LNG will be required to meet growing demand. Advances in liquefaction and transportation technologies have driven down the unit cost of LNG by 30% over the past decade and LNG is now viewed as cost competitive with domestic supplies. Therefore, to meet future demand, it is projected that LNG imports will grow to become 14-17% of the U.S. natural gas supply by 2025. This will require the construction of seven to nine new regasification terminals and expansions of three of the four existing terminals[2]. Research and development will be necessary to achieve this expectation.

Potential Large-Scale Sources of Natural Gas Supply

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[2] National Petroleum Council. 2003. Balancing Natural Gas Policy – Fueling Demands of a Growing Economy. Volume I.